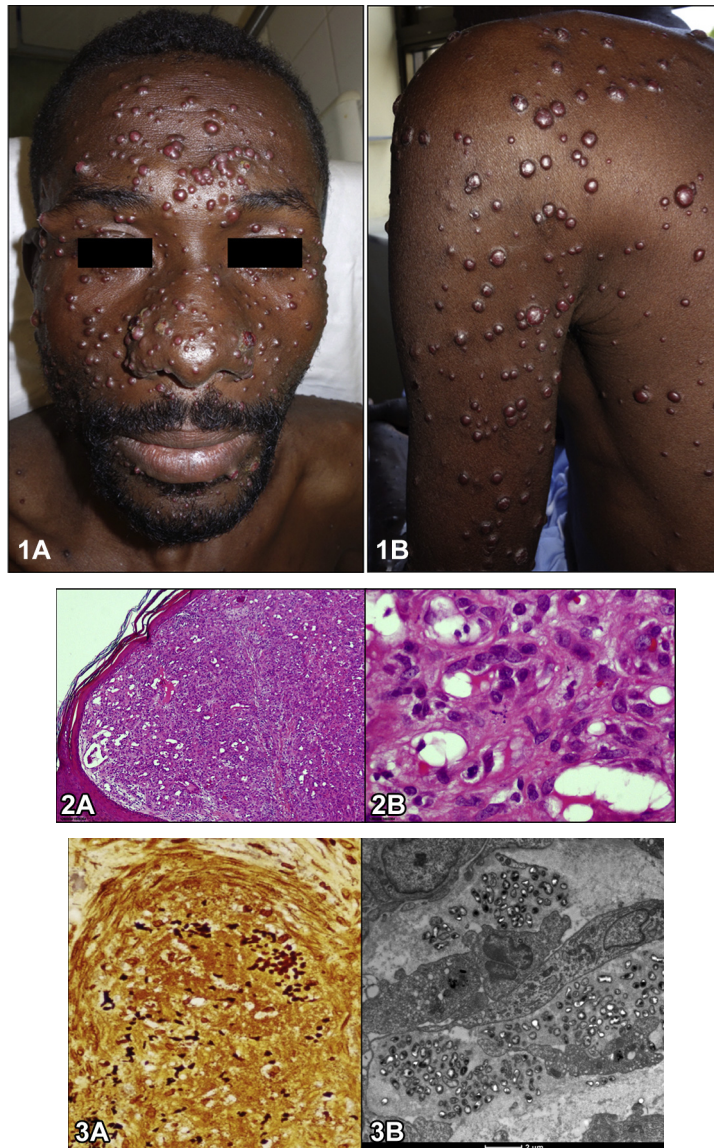


Disseminated skin nodules in a migrant patient



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CASE PRESENTATION

A 29-year-old patient, a native of Ivory Coast, was referred for priority dermatology evaluation after being in a rescue boat in the Mediterranean Sea for 2 months. The patient was not aware of any preexisting medical conditions and presented with a 4-month history of cutaneous lesions that started on the face and spread to the rest of the body. Physical examination found mild dehydration and hundreds of erythematous-violaceous nodules

and papules in all body segments (Fig 1). HIV serology was positive and CD4 cell count was 19/ μ L with 155,000 viral copies per milliliter. A skin biopsy was performed (Figs 2 and 3).

Question 1: Considering clinical and histopathologic images, what is the most likely diagnosis?

- A. Kaposi sarcoma (KS)
- B. Disseminated molluscum contagiosum
- C. Histoplasmosis
- D. Bacillary angiomatosis (BA)
- E. Cryptococcosis

Answers:

A. KA — Incorrect. Although the cutaneous lesions of this case are compatible, KS histopathology features ill-developed vasculature with slit-like spaces, prominent spindle cells, numerous extravasated erythrocytes, and siderophages. These findings are not observed in this case.

B. Disseminated molluscum contagiosum — Incorrect. We can discard this possibility because of the absence of molluscum bodies in the biopsy. No umbilicated lesions were observed.

C. Histoplasmosis — Incorrect. Disseminated histoplasmosis in immunocompromised patients usually manifests with erosions and ulcers in skin and mucosa. Cutaneous lesions are unspecific, but papular or nodular lesions usually present with scales or crusts. Histopathology of these lesions does not feature prominent vascular proliferation.

D. BA — Correct. BA is the second most frequent cause of cutaneous angiomatous lesions in HIV-positive patients.¹ In this case, the skin biopsy was highly suggestive, with a nodular dermal proliferation of small round blood vessels lined up by flat epithelioid endothelial cells, surrounded by an edematous stroma. A background inflammatory cell infiltrate of lymphocytes, plasma cells, histiocytes, and numerous neutrophils was also present, providing an additional clue for the diagnosis of BA.

Deeper lesions may be more cellular and compact. Endothelial cell lining up blood vessels might vary from plump to very thin.

E. Cryptococcosis — Incorrect. Although cutaneous manifestations of cryptococcosis are heterogeneous, lesions associated with advanced HIV infection are often umbilicated molluscum-like papules and nodules, without prominent vascular proliferation in the biopsy.

Question 2: Which of the following complementary tests and techniques would be less useful in this case?

- A. Transmission electron microscopy (TEM)
- B. Warthin-Starry stain
- C. Bacterial culture
- D. Periodic acid–Schiff (PAS) stain
- E. Human herpesvirus (HHV)-VIII immunostaining

Answers:

A. TEM — Incorrect. TEM found nonflagellated bacilli both extracellular and inside macrophages and endothelial cells. With high magnification, the triple membrane of the bacilli characteristic of *Bartonella* spp was visible. When available, this technique can help quickly confirm diagnosis, as polymerase chain reaction for *Bartonella* DNA is not performed in all centers and can delay diagnosis if referred to an external laboratory.

B. Warthin-Starry stain — Incorrect. Warthin-Starry is the histochemical technique of choice to show the presence of bacilli in cutaneous lesions of BA. It has been reported that Warthin-Starry stain is more sensitive for detecting *Bartonella* organisms than Steiner stain.²

C. Bacterial culture — Correct. Culture of *Bartonella* spp is difficult and impractical. This fragile

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organism grows very slowly and only on special media; hence, routine blood culture methods are not able to isolate it. Skin biopsy is the gold standard in diagnosis, as differentiating BA from other benign and malignant vascular proliferations is facilitated mainly by the use of specific stains and immunotechniques.

D. PAS stain — Incorrect. Negative PAS stain can help quickly discard deep fungal infections like histoplasmosis and cryptococcosis. In our case, PAS was negative for fungal structures.

E. HHV-VIII immunostaining — Incorrect. Negative HHV-VIII immunostaining goes strongly against the diagnosis of KS, as it was the case of our patient.

Question 3: Which of the following is true regarding this condition?

A. A combination of 2 antibiotics is the first-line treatment of choice.

B. In patients with advanced HIV infection, treatment can be suspended after 2 months if their CD4 cell count is greater than 100/ μ L.

C. Transmission can occur through tick or flea bites.

D. Cases have also been reported in solid organ transplant recipients but not in healthy individuals.

E. Both pathogenic species of the causal microorganism have the potential to infect the liver.

Answers:

A. A combination of 2 antibiotics is the first-line treatment of choice — Incorrect. Current clinical practice for the treatment of *Bartonella* infections relies mostly on personal experience, expert opinion, and microbiological susceptibility data.³ Erythromycin or oral tetracyclines in monotherapy are considered first-line treatment. A combination of doxycycline and rifampicin can be used in cases of relapse or severe disease.⁴

B. In patients with advanced HIV infection, treatment can be suspended after 2 months if their CD4 cell count is greater than 100/ μ L — Incorrect. Although there are no available clinical guidelines, most investigators agree that treatment should be

maintained for at least 3 months, with a CD4 cell count greater than 200/ μ L before suspension.

C. Transmission can occur through tick or flea bites — Correct. *Bartonella* infection is classically associated with exposure to cats, but transmission can also occur through arthropod vectors.^{4,5} Our patient did not present a history of contact with cats; however, he faced overcrowded sleeping conditions that might have increased his exposure to ticks and fleas.

D. Cases have also been reported in solid organ transplant recipients but not in healthy individuals — Incorrect. BA has also been described less frequently in healthy individuals. Most patients present some kind of immunodeficiency, including solid organ transplant recipients and individuals with underlying visceral neoplasms.⁴

E. Both pathogenic species of the causal microorganism of this condition have the potential to infect the liver — Incorrect. Hepatic peliosis has been exclusively documented in cases of *Bartonella henselae* infection. No cases of liver infection by *Bartonella quintana* have been reported yet.⁶

Abbreviations used:

BA: bacillary angiomatosis

HHV: human herpesvirus

KS: Kaposi sarcoma

PAS: periodic acid–Schiff

TEM: transmission electron microscopy

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